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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,920	02/04/2002	Takenori Sekijima	P/1071-1539	4354

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Edward A. Meilman  
DICSTEIN SHAPIRO MORIN & OSHINSKY LLP  
1177 Avenue of the America  
41st floor  
New York, NY 10036-2714

EXAMINER

SONG, MATTHEW J

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action**

Application No.

10/066,920

Applicant(s)

SEKIJIMA ET AL.

Examiner

Matthew J Song

Art Unit

1765

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 17 November 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY [check either a) or b)]**

- a) ☐ The period for reply expires \_\_\_\_\_ months from the mailing date of the final rejection.
- b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☒ The proposed amendment(s) will not be entered because:
- (a) ☒ they raise new issues that would require further consideration and/or search (see NOTE below);
  - (b) ☐ they raise the issue of new matter (see Note below);
  - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
  - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See Continuation Sheet.

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see continuation sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☒ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_.

Claim(s) objected to: \_\_\_\_\_.

Claim(s) rejected: 1-4,8-10 and 15-17.

Claim(s) withdrawn from consideration: \_\_\_\_\_.

8. ☐ The drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_.
10. ☐ Other: \_\_\_\_\_

NADINE G. NORTON  
SUPERVISORY PATENT EXAMINER

1. **Continuation of 2. NOTE:** Claim 1 has been amended to require the polycrystalline rod is 3mm or smaller in diameter. The new limitation would require further search and consideration. Claim 15 had previously presented the limitation but only in consideration with claim 8.

2. **Continuation of 5. NOTE:** Applicant's arguments filed 11/17/2004 have been fully considered but they are not persuasive.

Applicants' argument that the prior art does not teach or suggest that the orientation of growth of the crystals could be controlled in the absence of the seed (pg 6) is noted but is not found persuasive. Baghdadi et al discloses a process of converting a polycrystalline material into a monocrystalline material without the use of a seed (Abstract) and the conversion to a monocrystalline material will inherently require orientation control because a monocrystalline material by definition is orientated in only one direction.

Applicants' argument that Baghdadi does not suggest the desired orientation can be realized in a different process is noted but is not found persuasive. Baghdadi teaches the process is particularly suited for a polycrystalline silicon sheet but other semiconductor material may be employed as well (col 2, ln 30-41). Applicants' also appear to suggest that the sheet forming process of Baghdadi cannot be applied to the rod process taught by Sekijima et al or Kimura et al because of the different geometries. Merriam-Webster defines a rod to be a slender bar, a sheet to be a portion of something that is thin in comparison to its length and a ribbon to be a flat or tubular narrow closely woven fabric. Based on the conventional definitions of rod, ribbon and sheet a person of ordinary skill in the art would use a process for a ribbon or sheet in a process for a rod because a rod is merely a slender bar and falls under the definition of a sheet or ribbon.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Baghdadi teaches a process of forming a monocrystalline material without using a seed crystal. Seed crystals are expensive and increase production costs; therefore the elimination of the seed crystal will reduce production costs, which is desirable.

Applicants' argument that the references would not lead one skilled in the art to expect the results to be different if form and dimensions are controlled is noted but is not found persuasive. Baghdadi specifically discloses controlling the shape of the molten zone allows the single crystal to propagate throughout the semiconductor sheet or ribbon (col 4, ln 25-40); therefore geometry of the molten zone is known to affect the ability to form a single crystal from a polycrystalline material without the use of a seed crystal.